

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 12 February 2001 (12.02.01)	
International application No. PCT/GB00/02138	Applicant's or agent's file reference 07 36076
International filing date (day/month/year) 02 June 2000 (02.06.00)	Priority date (day/month/year) 10 June 1999 (10.06.99)
Applicant PHILLIPPS, John, Quentin	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
10 January 2001 (10.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Juan Cruz Telephone No.: (41-22) 338.83.38
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From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
VENNER, SHIPLEY & CO.
20 Little Britain
London EC1A 7DH
UNITED KINGDOM

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year) 14/08/2001	
Applicant's or agent's file reference 07 36076	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/GB 00/ 02138	International filing date (day/month/year) 02/06/2000
Applicant PHILLIPPS, John Quentin	

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.


☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

<p>Nam and mailing address of the International Searching Authority</p> <p> European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016</p>	<p>Authorized officer</p> <p>María Rodríguez Nóvoa</p>
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NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/ may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 07 36076	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 02138	International filing date (day/month/year) 02/06/2000	(Earliest) Priority Date (day/month/year) 10/06/1999
Applicant PHILLIPPS, John Quentin		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

1



None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PC 00/02138

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/60 G07F7/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G07F G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, INSPEC, IBM-TDB, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 815 665 A (BALAZ RUDOLPH ET AL) 29 September 1998 (1998-09-29) abstract figures 1-3,6 column 2, line 30 - line 48 column 2, line 62 -column 3, line 4 column 3, line 19 - line 45 column 4, line 15 - line 52 column 5, line 33 - line 48 ---	1-8
A	EP 0 813 325 A (AT & T CORP) 17 December 1997 (1997-12-17) abstract column 2, line 29 -column 3, line 34 figure 1 ----- -/--	1,5,8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

6 August 2001

Date of mailing of the international search report

14/08/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

van der Weiden, A

INTERNATIONAL SEARCH REPORT

International Application No

PC 8 00/02138

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 826 241 A (STEFFERUD EINAR A ET AL) 20 October 1998 (1998-10-20) abstract figures 1,3 column 2, line 6 - line 27 ---	1,5,8
A	EP 0 887 776 A (GRUNERT RAINER) 30 December 1998 (1998-12-30) abstract column 2, line 28 - line 57 column 3, line 13 - line 25 ---	1,5,8
A	EP 0 801 479 A (AT & T CORP) 15 October 1997 (1997-10-15) abstract column 2, line 58 -column 4, line 27 figures 1,2 -----	1,5,8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PC 00/02138

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5815665	A	29-09-1998	NONE	
EP 0813325	A	17-12-1997	US 5778173 A CA 2205124 A JP 10149397 A	07-07-1998 12-12-1997 02-06-1998
US 5826241	A	20-10-1998	AU 696475 B AU 3630995 A AU 9703898 A CA 2199942 A EP 0791202 A JP 10508708 T NZ 293783 A US 6246996 B WO 9608783 A	10-09-1998 29-03-1996 18-02-1999 21-03-1996 27-08-1997 25-08-1998 28-10-1998 12-06-2001 21-03-1996
EP 0887776	A	30-12-1998	NONE	
EP 0801479	A	15-10-1997	US 6252869 B CA 2193748 A JP 10031634 A	26-06-2001 30-06-1997 03-02-1998

REC'D 04 APR 2002

WIPO

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 07 36076	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/02138	International filing date (day/month/year) 02/06/2000	Priority date (day/month/year) 10/06/1999
International Patent Classification (IPC) or national classification and IPC G06F17/60		
Applicant PHILLIPPS, John Quentin		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 10/01/2001	Date of completion of this report 02.04.2002
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer van der Weiden, A Telephone No. +31 70 340 3669 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02138

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-14 as originally filed

Claims, No.:

1-9 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02138

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1,2,5-9
	No:	Claims	3,4

Inventive step (IS)	Yes:	Claims	1,2,5-9
	No:	Claims	3,4

Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Reference is made to the following documents:

- D1: US-A-5 815 665 (BALAZ RUDOLPH ET AL) 29 September 1998 (1998-09-29)
- D2: EP-A-0 813 325 (AT & T CORP) 17 December 1997 (1997-12-17)
- D3: US-A-5 826 241 (STEFFERUD EINAR A ET AL) 20 October 1998 (1998-10-20)
- D4: EP-A-0 887 776 (GRUNERT RAINER) 30 December 1998 (1998-12-30)
- D5: EP-A-0 801 479 (AT & T CORP) 15 October 1997 (1997-10-15)

- 1) Documents D1-D5 all show Internet payment systems in which credit card data (or other sensitive data) does not appear on the open network (Internet). Non of the documents however discloses a system in which the Internet connectivity provider substitutes credit card data with a transaction number. Therefore claim 1 is novel. Substitution of credit card numbers by transaction numbers is known in the art (see e.g. D1), non of the documents D1-D5 suggests however that the substitution should be done by the Internet connectivity provider. Therefore claim 1 involves an inventive step.
- 2) The claims 3 and 4 are not novel or inventive because any personal computer with a modem and a network adaptor is suitable as a user terminal for a system according to claims 1 or 2.
- 3) Claims 5 and 8 are drafted as independent claims for 'sites'. For the purpose of examination these claims and the dependent claims were considered to be 'system category' claims.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 December 2000 (21.12.2000)

PCT

(10) International Publication Number
WO 00/77733 A2

- (51) International Patent Classification⁷: G06R
- (21) International Application Number: PCT/GB00/02138
- (22) International Filing Date: 2 June 2000 (02.06.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
9913530.3 10 June 1999 (10.06.1999) GB
- (71) Applicant and
(72) Inventor: PHILLIPPS, John, Quentin [GB/GB]; 30 Mount Avenue, Ealing, London W5 2QJ (GB).
- (74) Agents: GEARY, Stuart, Lloyd et al.; Venner, Shipley & Co., 20 Little Britain, London EC1A 7DH (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,

DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

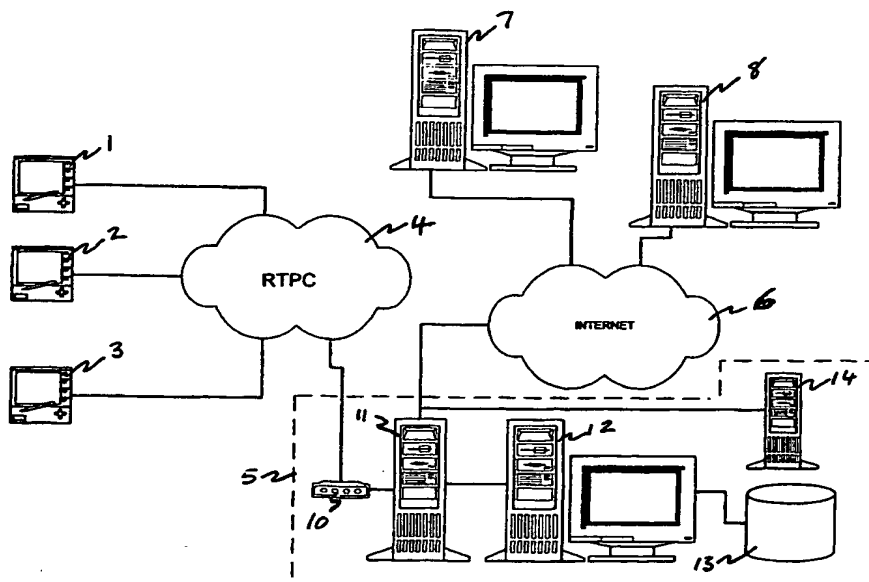
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— Without international search report and to be republished upon receipt of that report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC COMMERCE SYSTEM



(57) Abstract: A system for electronic commerce avoids the transmission of credit card numbers across the Internet (6). Internet vendor sites (7, 8) are registered with an ISP (5). Consequently, action URLs from credit card details forms for the vendor sites (7, 8) can be intercepted by the ISP (5). These action URLs are then modified to include a transaction ID code in place of the credit card details and sent to the relevant vendor site (7, 8) with the ISP (5) mimicking the user (1, 2, 3). The ISP (5) may be a financial service provider or have a secure communication link to a financial service provider.

WO 00/77733 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 December 2000 (21.12.2000)

PCT

(10) International Publication Number
WO 00/77733 A3

(51) International Patent Classification⁷: **G06F 17/60,**
G07F 7/10

(21) International Application Number: PCT/GB00/02138

(22) International Filing Date: 2 June 2000 (02.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9913530.3 10 June 1999 (10.06.1999) GB

(71) Applicant and

(72) Inventor: **PHILLIPPS, John, Quentin** [GB/GB]; 30
Mount Avenue, Ealing, London W5 2QJ (GB).

(74) Agents: **GEARY, Stuart, Lloyd et al.**; Venner, Shipley &
Co., 20 Little Britain, London EC1A 7DH (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,

DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

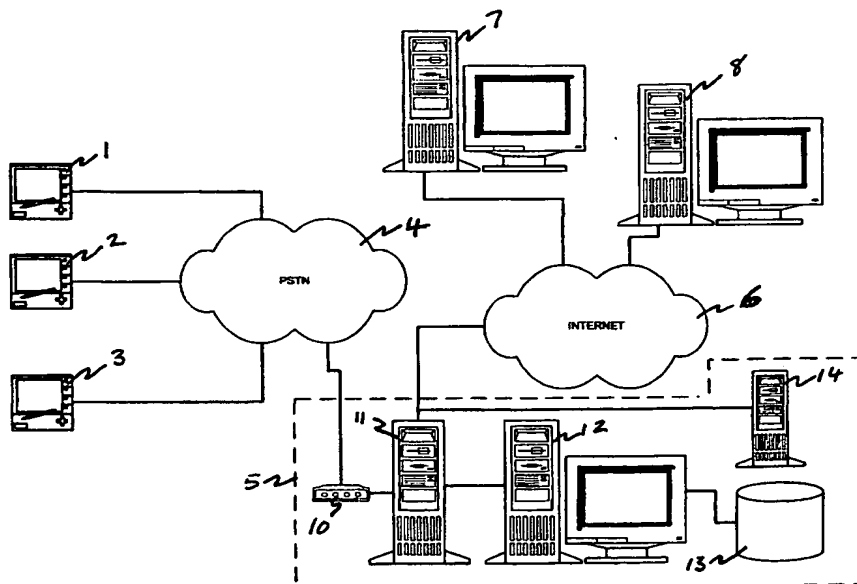
Published:

— with international search report

(88) Date of publication of the international search report:
15 November 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC COMMERCE SYSTEM



(57) Abstract: A system for electronic commerce avoids the transmission of credit card numbers across the Internet (6). Internet vendor sites (7, 8) are registered with an ISP (5). Consequently, action URLs from credit card details forms for the vendor sites (7, 8) can be intercepted by the ISP (5). These action URLs are then modified to include a transaction ID code in place of the credit card details and sent to the relevant vendor site (7, 8) with the ISP (5) mimicking the user (1, 2, 3). The ISP (5) may be a financial service provider or have a secure communication link to a financial service provider.

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Electronic Commerce System

Field of the Invention

The present invention relates to an electronic commerce system.

Background to the Invention

Internet commerce is a rapidly expanding area. Many goods and services can be ordered via the Internet. To do this, a user typically uses a web browser, such as Netscape Navigator or Microsoft Internet Explorer, to visit a web site of a vendor.

10 The web site will include pages enabling the user to select the goods or services required and a page containing a form by means of which the user can enter their credit or debit card details so that the vendor can receive payment for the ordered goods or services.

15 A disadvantage of this arrangement is that the user must send their credit or debit card details to the vendor via the Internet. The Internet is not a fully secure network and there is the possibility that the credit or debit card details may be intercepted and used in the perpetration of a fraud.

20 Summary of the Invention

It is an aim of the present invention to provide for Internet commerce whilst avoiding the transmission of credit or debit card details via the Internet itself.

According to the present invention, there is provided an electronic commerce
25 system comprising an Internet connectivity provider site, a financial service provider site for producing transaction IDs, a user terminal programmed with a web browser program, which may be a "microbrowser" in, for example, a WAP-enabled phone, and connectable to the Internet connectivity provider site for accessing the Internet, and a World Wide Web vendor site configured for sending a payment card
30 information entry form, e.g. an HTML form, having an action definition, e.g. an action URL, having at least one parameter, associated therewith, wherein the Internet connectivity provider site is configured to intercept messages from the user terminal which include said action definition and substitute at least a payment card

number (e.g. credit card or debit card number) within the parameter or parameters of said action definition with a transaction ID produced by the financial service provider site. It should be noted that since the Internet connectivity provider site is providing connectivity to the Internet for the user terminal, the user terminal will not therefore be communicating with the Internet connectivity provider site via the Internet.

Thus in a system according to the present invention, payment card numbers are stripped from messages before the messages enter the Internet. Furthermore, the vendor site can still be used by customers, accessing the World Wide Web by means other than the Internet connectivity provider site, and requires minimal modification from a typical vendor site configuration.

The term "World Wide Web" shall be taken to include WAP (Wireless Application Protocol) WAE (Wireless Application Environment) origin servers and analogous systems.

A user terminal for a system according to the present invention preferably comprises a computer including user input means, modem means and modem control data for controlling the modem for establishing communication with the Internet connectivity provider site, wherein the modem control data is not modifiable by means of data input using the user input means alone. More preferably, the user terminal includes read-only storage means storing an machine-specific ID. This ID can be used to confirm the identity of a person sending payment card details from the user terminal.

A World Wide Web vendor site for a system according to the present invention is preferably configured to run a process for processing said action definition, said process being capable of:-

recognising unsubstituted parameters and recording a transaction in a first manner in response thereto; and

recognising substituted parameters, which identify a transaction, and recording the transaction in a second manner in response thereto.

More preferably, said process is capable of recognising substituted parameters which indicate a reason (e.g. insufficient credit or incorrectly entered payment card related data) for non-completion of the transaction and sending a page to the user terminal in dependence thereon.

5 An Internet connectivity provider site for a system according to the present invention preferably includes:-

a database of vendor site IP addresses and associated action definitions;

10 search means for searching the database for the destination IP address in a message from the user terminal;

identification means responsive to the search means finding an IP address in the database to identify said action definition in the message; and

15 signalling means for signalling action definition parameters to the financial service provider site in dependence on identification of an action definition by the identification means and receiving a transaction ID or other data not comprising a payment card number therefrom;

means for substituting at least a payment card number within the parameter or parameters of said action definition with the transaction ID or other data; and

20 transmission means for sending the modified message to the vendor site.

Preferably, the transmission means is configured to mimic the user terminal when sending said modified message.

25 The Internet connecting provider site may be integrated with the financial service provider site.

Brief Description of the Drawings

Figure 1 shows the hardware of first, second and third embodiment of the present invention;

30 Figure 2 shows an exemplary credit card details entry HTML form; and

Figure 3 shows the hardware of a fourth embodiment of the present invention;

Detailed Description of Preferred Embodiment

Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings.

Referring to Figure 1, first, second and third user terminals 1, 2, 3 are connectable
5 via the pstn (public switched telephone network) 4 to a financial service provider site 5. The financial service provider site 5 is connectable via the Internet 6 to first and second Internet vendor sites 7, 8. The number of user terminals 1, 2, 3 is not restricted to three. Similarly, there may be many more Internet vendor sites than the two Internet vendor sites 6, 7 shown.

10

The first user terminal 1 comprises a pad-type computer, such as the Cyrix® WebPAD™, which includes a modem. WindowsCE is used as the operating system for the first user terminal 1. However, the dial-up networking configuration user interface is disabled so that a user cannot alter the Internet connectivity provider
15 used for Internet access. A web browser program is provided on the first user terminal 1 so that the user can access the World Wide Web using the terminal's modem.

The second and third user terminals 2, 3 are of the same construction as the first
20 user terminal 1.

The vendor sites 7, 8 comprise web servers. The vendor sites 7, 8 provide HTML forms (Figure 2) that enable a user to enter their credit card number and expiry date and their address.

25

The financial service provider site 5 comprises a modem bank 10 connected between the pstn 4 and a communication computer 11. The communication computer 11 is also connected to the Internet 6 and to a transaction processor comprising a transaction computer 12 and a database 13. The financial service
30 provider site 5 also comprises a domain name server (DNS) 14. The financial service provider site 5 is thus configured for the financial service provider to provide Internet connectivity to the user terminals 1, 2, 3.

All datagrams to be sent via the Internet 6 from user terminals 1, 2, 3 pass through the communication computer 11. The communication computer 11 contains a database of registered vendor sites 7, 8 including their IP addresses and the "action" URL of the vendor's credit card details form.

5 The making of a purchase by the user of user terminal 1 from the first Internet vendor site 7 will now be described. It will be appreciated that the method is effected by a conventional web browser running on the first user terminal 1 and custom programs running on the communication computer 11, the transaction
10 computer 12 and the web server at the first vendor site 7.

The user of the first user terminal 1 switches on the first user terminal 1 and runs the web browser program. This causes the first user terminal 1 to dial up the financial service provider site 5 and log on as with any Internet connectivity provider
15 providing dial-up Internet access. The web browser will submit an initial URL, e.g. for a search engine such as Yahoo or Alta Vista, or the home page of the financial service provider.

A name resolver process running on the first user terminal sends the server part of
20 the URL to the DNS 14 and receives back the IP address of that server. The URL is then sent from the first user terminal 1 in a message to the returned IP address.

The datagrams from the first user terminal are received by the communication machine 11. The communication machine 11 reads the destination IP address in the
25 header of the first datagram or a message and looks it up in its database of registered vendor sites. Since, in this case, the IP address is not for a registered vendor site, the first datagram is forwarded immediately to the Internet 6 and the subsequent datagrams of the message are forwarded as soon as possible to the Internet 6. In this case the communication computer 111 now operates merely as a
30 router for subsequent datagrams of the message.

The destination server responds to the URL in the message from the first user terminal 1 by replying with a message containing HTML code for a page. The

datagrams of this message are routed by the Internet 6 to the communication computer 11 which then routes then via the modem bank 10 along the pstn connection to the first user terminal 1. The web browser, running on the first user terminal 1, then displays the page defined by the HTML in the reply message.

5 The system operates in this manner until, the first user terminal 1 sends a URL addressed to, for example, the first vendor site 7 which, for example, identifies the vendor's home page. In this case, the communication computer 11 finds the destination IP address in the first datagram of the message containing the URL in its
10 database. Thus, rather than immediately forwarding the datagrams of the message, the communication computer 11 caches the datagrams until the whole message has been received. When the whole message has been received, the communication machine 11 analyses the message to determine whether it contains the "action" URL of the destination vendor's credit card details form as contained in its database.
15 Since, the URL is for the vendor's home page, the datagrams are now forwarded unmodified to the first vendor site 7 via the Internet 7.

At the TCP level, once the communication computer 11 has identified that a datagram from the first user terminal 1 is addressed to the first vendor site 7, it
20 must respond to the first user terminal 1 as if it were the first vendor site 7 for connection set up, data transfer and connection termination. Also, when the communication computer 11 forwards the cached message to the first vendor site 7, it must mimic the first user terminal 1 so that the response to the sent URL is correctly addressed to the first user terminal 1 and lost or corrupted datagrams are
25 retransmitted.

It will now be assumed that the user of the first user terminal 1 has decided to make a purchase and has received the first vendor's credit card details form. The user fills in the form and clicks on the SUBMIT button (see Figure 2). This causes the
30 form's action URL to be submitted. The message containing the action URL is intercepted by the communication machine 11 as described above. However, the communication computer 11 now determines that the action URL is present.

On determining that the action URL is present, the communication computer 11 sends the action URL to the transaction computer 12. The transaction computer 12 compares the data in the action URL with card holder details in the database 13. If the data is incorrect, e.g. the address is not that of the card holder, the transaction
5 computer 12 sends back the message "invalid" to the communication computer 11. The communication computer 11 then strips the data from the action URL and replaced it with the name-value pair "details=invalid". The reconstructed action URL is then sent to the first vendor site 7 with the communication computer 11 mimicking the first user terminal 1.

10

It will be appreciated that a standard action URL used by all vendors would simplify the extraction of the card and user details from the action URL.

The process at the first vendor site 7, which handles the action URL, identifies the
15 "details=invalid" name-value pair and sends an error warning HTML page to the first user terminal 1. This page is then displayed by the web browser running on the first user terminal 1.

If the data in the action URL is correct, the transaction computer 12 generates a
20 unique transaction ID, which it stores in the database 13 against the card holder's account, and sends the transaction ID to the communication computer 11. The communication computer 11 then strips the data from the action URL and replaced it with the name-value pair "ID=nnnnnnnn" where n is a character of the transaction ID. The reconstructed action URL is then sent to the first vendor site 7
25 with the communication computer 11 mimicking the first user terminal 1.

On receiving the modified action URL, the action URL-handling process of the first vendor site 7 validates and logs the transaction ID for later confirmation of the transaction with the credit card company and sends a confirmation HTML page to
30 the first user terminal 1.

Logged transaction IDs are sent by a secure means, e.g. a direct pstn connection, to the credit card company together with the amount to be charged. The credit card

company then compares the transaction ID with the records in the database 13 before authorising the transfer of funds to the first vendor.

In a second embodiment having the hardware configuration shown in Figure 1, the action URL produced by the credit card form (Figure 2) includes the value of the transaction. This information is sent by the communication computer 11 to the transaction computer 12 with the credit card number and card holder details. The transaction computer 12 then determines by reference to the database 13 whether the user has sufficient credit for the transaction. If the user does not have sufficient credit for the transaction, the transaction computer 12 sends the message "insufficient credit" to the communication computer 11. The communication computer 11 then strips the data from the action URL and replaced it with the name-value pair "details=insufficient credit". The reconstructed action URL is then sent to the first vendor site 7 with the communication computer 11 mimicking the first user terminal 1.

The process at the first vendor site 7, which handles the action URL, identifies the "details=insufficient credit" name-value pair and sends an error warning HTML page to the first user terminal 1. This page is then displayed by the web browser running on the first user terminal 1.

In a third embodiment having the hardware configuration shown in Figure 1, the user terminals 1, 2, 3 are provided with unique IDs, e.g. chip-specific IDs for their processors. In this case, the operation of the communication computer 11 is modified so that on receipt of an action URL for a registerer vendor site 6, 7, it sends a message to the user terminal 1, 2, 3 requesting the ID. A process running on the user terminal 1, 2, 3 responds to this message by sending the ID back to the communication computer 11. If the ID is not received by the communication machine within a predetermined time the connection to the user terminal 1, 2, 3 is dropped as it is assumed that the user terminal 1, 2, 3 is not an authorised terminal.

If an ID is received, it is passed to the transaction computer 12 with the data from the action URL. The transaction computer 12 tries to match the ID with the credit

card number. If there is a match, the process proceeds as in the first embodiment. However, if there is not a match, the transaction computer 12 sends the message "imposter" to the communication computer 11 which responds by dropping the connection to the user terminal 1, 2, 3.

5 In either exception condition, caller line identification (CLI) can be used to identify the telephone line used to dial into the financial service provider site 5. This number can then be passed to a law-enforcement agency with a report of an attempted credit card fraud.

10 Referring to Figure 3, first, second and third user terminals 101, 102, 103 are connectable via the pstn (public switched telephone network) 104 to an Internet connectivity provider site 109. A financial service provider site 105 is connected to the Internet connectivity provider site 109 by a leased line 115. Internet
15 connectivity provider site 109 is connectable via the Internet 106 to first and second Internet vendor sites 107, 108. The number of user terminals 101, 102, 103 is not restricted to three. Similarly, there may be many more Internet vendor sites than the two Internet vendor sites 106, 107 shown.

20 The first user terminal 101 comprises a pad-type computer, such as the Cyrix® WebPAD™, which includes a modem. WindowsCE is used as the operating system for the first user terminal 101. However, the dial-up networking configuration user interface is disabled so that a user cannot alter the Internet connectivity provider used for Internet access. A web browser program is provided on the first user
25 terminal 101 so that the user can access the World Wide Web using the terminal's modem.

The second and third user terminals 102, 103 are of the same construction as the first user terminal 101.

30 The vendor sites 107, 108 comprise web servers. The vendor sites 107, 108 provide HTML forms (Figure 2) that enable a user to enter their credit card number and expiry date and their address.

The Internet connectivity provider site 109 comprises a modem bank 110 connected between the pstn 104 and a communication computer 111. The communication computer 111 is also connected to the Internet 106. The Internet connectivity
5 provider site 109 also comprises a domain name server (DNS) 114.

The financial service provider site 105 comprises a transaction computer 112 and a database 113. The transaction computer 112 is connected to the communication computer 111 by the leased line 115.

10

All datagrams to be sent via the Internet 106 from user terminals 101, 102, 103 pass through the communication computer 111. The communication computer 111 contains a database of registered vendor sites 107, 108 including their IP addresses and the "action" URL of the vendor's credit card details form.

15

The making of a purchase by the user of user terminal 101 from the first Internet vendor site 107 will now be described. It will be appreciated that the method is effected by a conventional web browser running on the first user terminal 101 and custom programs running on the communication computer 111, the transaction
20 computer 112 and the web server at the first vendor site 107.

The user of the first user terminal 101 switches on the first user terminal 101 and runs the web browser program. This causes the first user terminal 101 to dial up the Internet connectivity provider site 109 and log on as with any Internet
25 connectivity provider providing dial-up Internet access. The web browser will submit an initial URL, e.g. for a search engine such as Yahoo or Alta Vista, or the home page of the Internet connectivity service provider.

A name resolver process running on the first user terminal sends the server part of
30 the URL to the DNS 114 and receives back the IP address of that server. The URL is then sent from the first user terminal 101 in a message to the returned IP address.

The datagrams from the first user terminal 101 are received by the communication machine 111. The communication machine 111 reads the destination IP address in the header of the first datagram and looks it up in its database of registered vendor sites. Since, in this case, the IP address is not for a registered vendor site 107, 108, the first datagram is forwarded immediately to the Internet 106 and the subsequent datagrams of the message are also immediately forwarded to the Internet 106. In this case the communication computer 111 now operates merely as a router for subsequent datagrams of the message.

- 10 The destination server responds to the URL in the message from the first user terminal 101 by replying with a message containing HTML code for a page. The datagrams of this message are routed by the Internet 106 to the communication computer 111 which then routes then via the modem bank 110 along the pstn connection to the first user terminal 101. The web browser, running on the first
15 user terminal 101, then displays the page defined by the HTML in the reply message.

The system operates in this manner until, the first user terminal 101 sends a URL addressed to the first vendor site 107 which, for example, identifies the vendor's
20 home page. In this case, the communication computer 11 finds the destination IP address in the first datagram of the message containing the URL in its database. Thus rather than immediately forwarding the datagrams of the message, the communication computer 111 caches the datagrams until the whole message has been received. When the whole message has been received, the communication
25 machine 111 analyses the message to determine whether it contains the "action" URL of the destination vendor's credit card details form as contained in its database. Since, the URL is for the vendor's home page, the datagrams are now forwarded unmodified to the first vendor site 107 via the Internet 106.

- 30 At the TCP level, once the communication computer 111 has identified that a datagram from the first user terminal 101 is addressed to the first vendor site 107, it must respond to the first user terminal 101 as if it were the first vendor site 107 for connection set up, data transfer and connection termination. Also, when the

communication computer 111 forwards the cached message to the first vendor site 107, it must mimic the first user terminal 101 so that the response to the sent URL is correctly addressed to the first user terminal 101 and lost or corrupted datagrams are retransmitted.

5

It will now be assumed that the user of the first user terminal 101 has decided to make a purchase and has received the first vendor's credit card details form (Figure 2). The user fills in the form and clicks on the SUBMIT button (Figure 2). This causes the form's action URL to be submitted. The message containing the action
10 URL is intercepted by the communication machine 111 as described above. However, the communication computer 111 now determines that the action URL is present.

15

On determining that the action URL is present, the communication computer 111 sends the action URL to the transaction computer 112. The transaction computer 112 compares the data in the action URL with card holder details in the database 113. If the data is incorrect, e.g. the address is not that of the card holder, the transaction computer 112 sends back the message "invalid" to the communication computer 111. The communication computer 111 then strips the data from the
20 action URL and replaced it with the name-value pair "details=invalid". The reconstructed action URL is then sent to the first vendor site 107 with the communication computer 111 mimicking the first user terminal 101.

The process at the first vendor site 107, which handles the action URL, identifies
25 the "details=invalid" name-value pair and sends an error warning HTML page to the first user terminal 101. This page is then displayed by the web browser running on the first user terminal 101.

If the data in the action URL is correct, the transaction computer 112 generates a
30 unique transaction ID, which it stores in the database 113 against the card holder's account, and sends the transaction ID to the communication computer 111. The communication computer 111 then strips the data from the action URL and replaced it with the name-value pair "ID=nnnnnnnn" where n is a character of the

transaction ID. The reconstructed action URL is then sent to the first vendor site 107 with the communication computer 111 mimicking the first user terminal 101.

On receiving the modified action URL, the action URL-handling process of the first vendor site 107 validates and logs the transaction ID for later confirmation of the transaction with the credit card company and sends a confirmation HTML page to the first user terminal 101.

10 Logged transaction IDs are sent by a secure means, e.g. a direct pstn connection, to the credit card company together with the amount to be charged. The credit card company then compares the transaction ID with the records in the database 113 before authorising the transfer of funds to the first vendor.

15 In each of the foregoing embodiments, a user cannot change the dial-up networking setup of their user terminal 1, 2, 3. However, changing circumstances may make a change necessary, e.g. changes in the telephone number to be dialled. These changes can be made by means of a JAVA™ or ActiveX applet associated with a web page provided by the Internet connectivity providing entity.

20 The operation of the communication computer 11, 111 in any of the foregoing embodiments may be modified so that all messages from the user terminals 1, 2, 3, 101, 102, 103 are cached. The communication computer 11, 111 can then analyse the content of the messages to determine whether it comprises an action URL of a credit card details form of an unregistered "vendor". These messages can then be
25 blocked to avoid credit card details being sent to bogus vendors.

The connection between the user terminals 1, 2, 3, 101, 102, 103 and the communication computer 11, 111 may be, but not exclusively so, via a telephone circuit, on ISDN connection or a leased line.

30

It will be appreciated that many modifications can be made to the above-described embodiments to provide security beyond that obtained by avoiding the transmission of credit card details over the Internet.

The present invention has been explained with reference to a system employing HTML. However, it will be appreciated that with the development of XML, other mark up languages, e.g. WML, may be developed that are useable in embodiments
5 of the present invention.

Claims

1. An electronic commerce system comprising:-
an Internet connectivity provider site;
5 a financial service provider site for producing transaction IDs;
a user terminal programmed with a web browser program and connectable to the Internet connectivity provider site for accessing the Internet; and
a World Wide Web vendor site configured for sending a payment card information entry form having an action definition, having at least one parameter, associated therewith,
10 wherein the Internet connectivity provider site is configured to intercept messages from the user terminal which include said action definition and substitute at least a payment card number within the parameter or parameters of said action definition with a transaction ID produced by the financial service provider site.
- 15 2. A system according to claim 1, wherein said entry form is an HTML form and said action definition comprises an action URL defined in the HTML code for said form.
3. A user terminal for a system according to claim 1 or 2, comprising a computer including user input means, modem means and modem control data for controlling the
20 modem for establishing communication with the Internet connectivity provider site, wherein the modem control data is not modifiable by means of data input using the user input means alone.
4. A user terminal according to claim 3, including read-only storage means storing a
25 machine-specific ID.
5. A World Wide Web vendor site for a system according to claim 1 or 2, configured to run a process for processing said action definition, said process being capable of:-
recognising unsubstituted parameters and recording a transaction in a first manner
30 in response thereto; and
recognising substituted parameters, which identify a transaction, and recording the transaction in a second manner in response thereto.

6. A World Wide Web vendor site according to claim 5, wherein said process is capable of recognising substituted parameters which indicate a reason for non-completion of the transaction and sending an page to the user terminal in dependence thereon.
- 5 7. A World Wide Web vendor site according to claim 5, wherein said reason is insufficient credit or incorrectly entered payment card related data.
8. An Internet connectivity provider site for a system according to claim 1 or 2, including:-
- 10 a database of vendor site IP addresses and associated action definitions;
search means for searching the database for the destination IP address in a message from the user terminal;
identification means responsive to the search means finding an IP address in the database to identify said action definition in the message; and
- 15 signalling means for signalling action definition parameters to the financial service provider site in dependence on identification of an action definition by the identification means and receiving a transaction ID or other data not comprising a payment card number therefrom;
- means for substituting at least a payment card number within the parameter or
- 20 parameters of said action definition with the transaction ID or other data; and
transmission means for sending the modified message to the vendor site.
9. An Internet connectivity provider site according to claim 8, wherein the transmission means is configured to mimic the user terminal when sending said modified
- 25 message.

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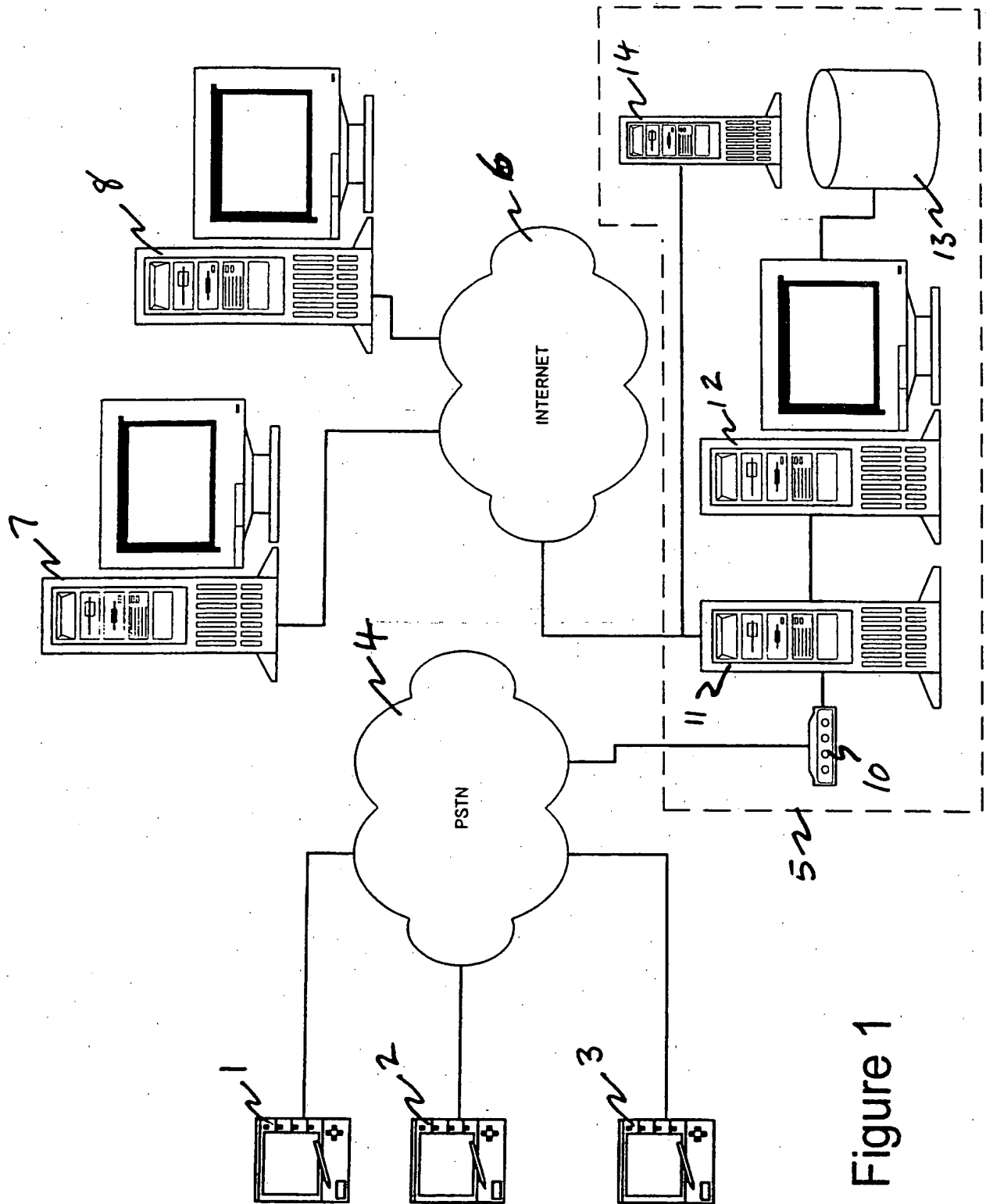


Figure 1

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Web Browser	
File Edit View Go Bookmarks Options Directory Window Help	
URL http://www.examplevendor.co.uk/orders/creditcardform.html	
Credit Card Details	
Mastercard	<input checked="" type="radio"/>
Visa	<input type="radio"/>
Number	<input type="text"/>
Expiry	<input type="text" value="05"/> / <input type="text" value="1999"/>
Name	<input type="text"/>
Street	<input type="text"/>
City	<input type="text"/>
Postcode/Zip	<input type="text"/>
Country	<input type="text"/>
<input type="button" value="Submit"/> <input type="button" value="Clear"/>	

Figure 2

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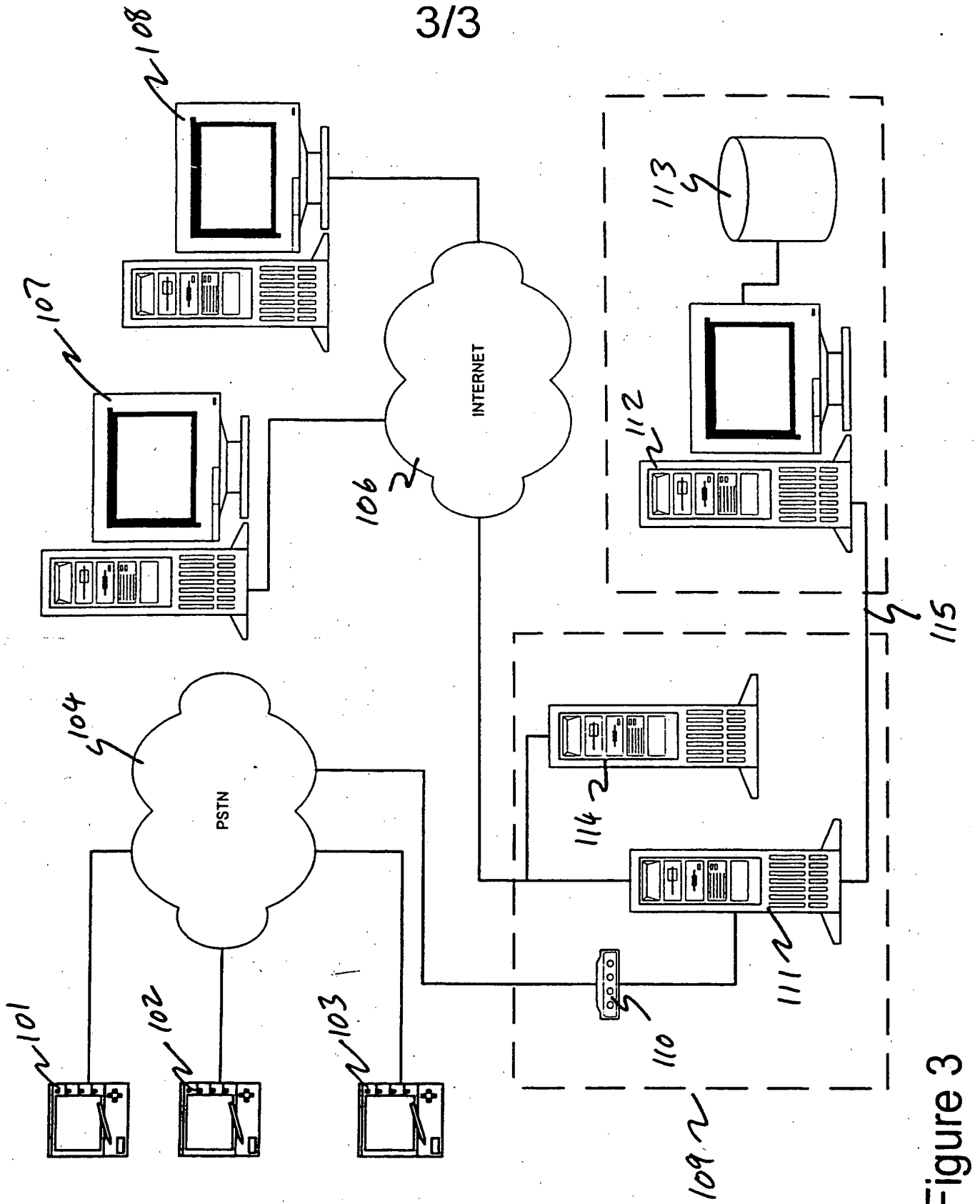


Figure 3